

REMARKS

Claims 1-4, 10-17, 21-27, 30 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Cox, et al. (U.S. Patent 5,812,533); claims 5-20, 24-26, 28-33, 35, and 36 are rejected under 35 U.S.C. 103(a) as obvious over Cox, et al. (U.S. Patent 5,812,333); and claims 27-34 and 36-40 are rejected under 35 U.S.C. 103(a) as being obvious over Cox, et al. in view of Daly (U.S. Patent 5,748,896). These rejections are respectfully disagreed with, and are traversed below.

Claims 1-4, 10-17, 21-27, 30 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Cox, et al. (U.S. Patent 5,812,533). Amended claim 1 recites in part:

“...establishing a set of attributes of ~~the~~ a service provision; selecting from said set of attributes for defining a Service Level Agreement (SLA) with the service provider; and provisioning at least one client computer of the customer in accordance with constraints imposed by the SLA..”

Support for this merely clarifying claim amendment can be found at least at page 7, lines 15-16.

Cox, et al. (U.S. Patent 5,812,533) does not disclose this. In fact, Cox et al. discloses

“..the Service Switching Point is used to pick out calls identified as needing Intelligent Network services. It does this by reference to trigger tables in the SSP. If the call is an IN call, which will usually be identified by the associated destination number, the SSP in the switch 110 triggers intelligent processing by passing a request to an SCP 115.

On receipt of a request, an SCP 115 uses call-related information, usually the destination number, to locate service logic which it then executes. This service logic execution is done in a "Service Logic Execution Environment", of SLEE, in

the SCP.” (column 1, lines 59-64 and column 2, lines 1-5)

Claim 1 is thus clearly distinguished from Cox et al. as Cox et al. is primarily concerned with providing services for calls only by way of a Service Control Point (SCP) within a network, and is not seen to disclose or suggest the use of Service Level Agreements (SLAs) where services are made available to at least one client computer of a customer of a service provider. Thus Cox et al. cannot be read to provide a solution to the problems that the present invention seeks to overcome and therefore, claim 1 is not anticipated by Cox et al.

Claim 25 recites in part:

“...provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing resources to at least one data processing site that offers data processing capacity for use; and transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources from the at least one data processing site that offers data processing capacity for use to one of the customer, the service provider, or another service provider.”

Cox, et al. does not disclose this. In fact, Cox et al. discloses:

“The resource allocator 700 maintains a list of physical resources and has knowledge of their capabilities e.g. the resource allocator which elements can deliver a particular announcement. It maintains a list of resources currently allocated to particular calls in progress. It deduces which physical resources are available to allocate perform operations for active calls.” (see column 32, lines 3-9)

Cox et al. is not seen to teach or suggest “allocating at least some required data processing

resources to at least one data processing site that offers data processing capacity for use and transparently re-provisioning the customer...by re-allocating at least some required data processing resources from the at least one data processing site that offers data processing capacity for use...” and thus claim 25 is clearly not anticipated by Cox et al.

Similarly, claim 26 recites in part:

“...provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing resources to at least one other service provider that offers data processing capacity for use; and transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources from the at least other service provider that offers data processing capacity for use to one of the customer, the service provider, or a data processing site that offers data processing capacity for use.”

Cox et al. does not disclose this. Cox et al. discloses “(t)he components of the SDI (Service Delivery Infrastructure) 200, and services that run under its auspices, are all contained within a finite set of manageable processes on the target platform.” (see column 26, lines 27-29)

Cox et al. is not seen to teach or suggest “allocating at least some required data processing resources to at least one other service provider that offers data processing capacity for use; and transparently re-provisioning the customer...by re-allocating at least some required data processing resources from the at least other service provider that offers data processing capacity for use...” and thus claim 26 is clearly not anticipated by Cox et al.

Amended claim 27 recites in part:

“..a system management server for establishing a set of attributes of ~~the~~ a service

provision; and a customer interface for selecting from said set of attributes for defining a Service Level Agreement (SLA) with the service provider, said system management server being responsive to said SLA for provisioning at least one client computer of the customer in accordance with constraints imposed by the SLA.”

Support for this merely clarifying claim amendment can be found at least at page 7, lines 15-16.

Cox et al. does not disclose this. In fact, Cox et al. discloses:

“..the SDI 200 resides on an Intelligent Network Element (e.g. SCP 115 or SN 135) which is within the ambit of a Service Creation Environment (SCE) 115. The SDI 200 and the applications running under its auspices provide the call processing part of an IN service.” (see column 9, lines 15-20)

Claim 27 discloses a data processing system for service provisioning a customer. Cox et al. is not seen to disclose a data processing system as Cox et al. is applicable to telecommunication systems.

Claim 27 is thus clearly distinguished from Cox et al. as Cox et al. is primarily concerned with providing services only by way of a Service Control Point (SCP) or Service Node (SN) within a network, and is not seen to disclose or suggest the use of Service Level Agreements (SLAs) for provisioning at least one client computer of a customer in accordance with constraints imposed by the SLA, and thus claim 27 is not anticipated by Cox et al.

Claim 35 recites in part:

“..third executable code for provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing

resources to at least one of the service provider, the customer, to another service provider, or to a data processing site that offers data processing capacity for use; and

fourth executable code for transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources between at least one of the service provider, the customer, the another service provider, or the data processing site that offers data processing capacity for use.”

As discussed above, Cox et al. do not disclose a Service Level Agreement for allocating at least some data processing resources as in claim 35, and thus claim 35 is not anticipated by Cox et al.

Claim 36 recites in part:

“..a virtual service provider coupled to the customer through the communication network, said virtual service provider comprising a system management server for establishing a set of attributes of a customer service provision, and for allocating data processing capability for provisioning the customer from the data processing capability registered by said plurality of data processing sites.”

Cox et al. does not disclose a virtual service provider as in claim 36. Cox et al. does disclose a virtual network:

“It might be useful to note in the following description that "virtual network" is a term used to describe a network effectively dedicated to use of a single customer...” (see column 6, lines 54-56)

However, it is not admitted that this disclosure of a “virtual network” implies a “virtual service

provider". Therefore, claim 36 is not anticipated by Cox et al.

Claims 1-4, 10-17, 21-27, 30 and 34-36 are thus clearly not anticipated by Cox et al. In that independent claim 1 is not anticipated by Cox et al., dependent claims 2-24, which follow from independent claim 1, are also not anticipated by Cox et al. and should be allowed. In that independent claims 25-27 are not anticipated by Cox et al., dependent claims 28-34, which follow from independent claim 27, are also not anticipated by Cox et al. and should be allowed. In that independent claims 35 and 36 are not anticipated by Cox et al., dependent claims 37-40, which follow from independent claim 36, are also not anticipated by Cox et al. and should be allowed.

Claims 5-20, 24-26, 28-33, 35, and 36 are rejected under 35 U.S.C. 103(a) as obvious over Cox, et al. (U.S. Patent 5,812,333). The Examiner states that "Cox et al. is further interpreted to disclose those limitations not specifically enumerated within Cox et al. which include the originations or destinations of data processing resource allocation or re-allocation, the attribute options, the use of a value-added services provider, or Internet (e-marketplace) application."

Claim 5 recites:

"A method as in claim 1, wherein the step of provisioning the customer includes a step of allocating service provider data processing resources to a data processing task of the customer."

Cox et al. does not disclose this. As previously discussed, Cox et al. is primarily concerned with providing services for calls, and is not seen to disclose or suggest the situation where services are made available to at least one client computer of a customer by "allocating service provider data processing resources to a data processing task of the customer." Thus Cox et al. cannot be read to provide a solution to the problems that the present invention seeks to overcome and therefore, claim 5, which is dependent on claim 1, is not rendered obvious in view of Cox et al.

Similarly, claim 6 recites in part,

“...wherein the step of provisioning the customer includes a step of allocating customer data processing resources to a data processing task of the customer.”

Cox et al. does not disclose this. The only place where services are provided in Cox et al. is from a Service Control Point (SCP):

“...the Service Switching Point is used to pick out calls identified as needing Intelligent Network services. It does this by reference to trigger tables in the SSP. If the call is an IN call, which will usually be identified by the associated destination number, the SSP in the switch 110 triggers intelligent processing by passing a request to an SCP 115. The processing of the numbers which do not trigger at the SSP in the switch 110 proceed to be routed and carried by the transmission network 100 as in the past.

On receipt of a request, an SCP 115 uses call-related information, usually the destination number, to locate service logic which it then executes. This service logic execution is done in a "Service Logic Execution Environment", of SLEE, in the SCP.” (see column 1 lines 59-67 and column 2, lines 1-5)

Cox et al. does not disclose, “..allocating customer data processing resources to a data processing task of the customer.” Therefore, claim 6, which is dependent on claim 1, is not obvious in view of Cox et al.

Claim 16 recites:

“A method as in claim 1, wherein said SLA is comprised of at least one of a cost

attribute, an interactivity attribute, and an availability attribute.”

Cox et al. does not disclose this. In fact, Cox et al. discloses:

“Feature views are the representation of a call state that fulfils the conditions for that feature to be invoked. The view that a feature requires is specified by the feature provider in the feature package. The view for a feature is specified in terms of the presence or absence of an element of the call context picture and expressed in boolean algebra syntax.” (column 42, lines59-64)

Services or features in Cox et al. are specified in terms of the presence or absence of an element of the call context. Contrary to Cox et al. dependent claim 16, in view of independent claim 1, from which dependent claim 16 follows, establishes attributes for provisioning at least one client computer of the customer, and thus is not rendered unpatentable over Cox et al.

In that independent claim 1 is not obvious in view of Cox et al., dependent claims 2-24, which depend from independent claim 1, are also not obvious in view of Cox et al. and are not rendered unpatentable.

Claim 25 recites in part:

“...provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing resources to at least one data processing site that offers data processing capacity for use; and transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources from the at least one data processing site that offers data processing capacity for use to one of the customer, the service provider, or another service provider.”

Cox, et al. does not disclose this. In fact, as previously discussed, Cox et al. discloses:

“The resource allocator 700 maintains a list of physical resources and has knowledge of their capabilities e.g. the resource allocator which elements can deliver a particular announcement. It maintains a list of resources currently allocated to particular calls in progress. It deduces which physical resources are available to allocate perform operations for active calls.” (see column 32, lines 3-9)

Cox et al. is not seen to teach or suggest “allocating at least some required data processing resources to at least one data processing site that offers data processing capacity for use and transparently re-provisioning the customer...by re-allocating at least some required data processing resources from the at least one data processing site that offers data processing capacity for use...” and thus claim 25 is clearly not obvious in view of Cox et al.

Similarly, claim 26 recites in part:

“...provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing resources to at least one other service provider that offers data processing capacity for use; and transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources from the at least other service provider that offers data processing capacity for use to one of the customer, the service provider, or a data processing site that offers data processing capacity for use.”

Cox et al. does not disclose this. Cox et al. discloses “(t)he components of the SDI (Service Delivery Infrastructure) 200, and services that run under its auspices, are all contained within a finite set of manageable processes on the target platform.” (see column 26, lines 27-29)

Cox et al. is not seen to teach or suggest “allocating at least some required data processing resources to at least one other service provider that offers data processing capacity for use; and transparently re-provisioning the customer...by re-allocating at least some required data processing resources from the at least other service provider that offers data processing capacity for use...” and thus claim 26 is clearly not obvious in view of Cox et al.

Claim 28 recites in part:

“...said system management server is responsive to at least one of a customer service-related criterion, a service provider criterion, or a change in a data processing environment, for re-provisioning the customer, within constraints imposed by said SLA, by allocating service provider data processing resources to a data processing task of the customer, or by allocating customer data processing resources to a data processing task of the customer, or by allocating data processing resources of another service provider to a data processing task of the customer, or by allocating all required data processing resources from at least one other service provider to a data processing task of the customer, or by allocating data processing resources from a remote data processing site to a data processing task of the customer.”

The services in Cox et al. are concerned with services provided by virtual networks, as opposed to the present invention which is concerned with “...allocating service provider data processing resources to a data processing task of the customer, or by allocating customer data processing resources to a data processing task of the customer, or by allocating data processing resources of another service provider to a data processing task of the customer...” Cox et al. does not teach or suggest of a choice of whether a service should be provided locally on a client device, or locally from a server, or remotely from a server. Cox et al. is primarily concerned with service provision in the virtual network itself.

“By structuring the service provision functionality according to dedicated virtual networks carrying dedicated service sets for respective users, it becomes relatively simple to allow new services to be made available to a user.” (see column 3, lines 63-66)

Thus, it would not have been obvious to one skilled in the art to include additional data processing resource allocation beyond the SCP of Cox et al.

Claim 33 recites in part:

“..wherein the service provider is a value-added services provider, and wherein the customer is provisioned and re-provisioned, within the constraints imposed by the SLA, by allocating at least some required data processing resources from data processing resources of the value-added services provider, from at least one other service provider, and from the customer, to a data processing task of the customer, and further re-provisioning the customer, within the constraints imposed by the SLA, by changing the allocation of at least some of the allocated data processing resources.”

Cox et al also does not teach or suggest the use of a value-added service provider, as all services are supplied by the BT network:

“A service can be added to a virtual network, provided the service exists in a library on the network element; a service may be deleted from a virtual network. All services have a control state of enabled or disabled which a virtual network can read; this state is modifiable by the BT administrator.” (see column 21, lines 49-53)

“Virtual nodes can be created or deleted only by the network provider or operator for any virtual network 800. A virtual node 310 can exhibit a state of enabled or disabled. The network administrator of the network operator is able to modify the state of a node.” (see column 24, lines 1-5)

In that independent claim 27 is not obvious in view of Cox et al., dependent claims 28-34, which depend from independent claim 27, are also not obvious in view of Cox et al.

Claim 35 recites in part:

“..third executable code for provisioning the customer, within the constraints imposed by the SLA, by allocating at least some required data processing resources to at least one of the service provider, the customer, to another service provider, or to a data processing site that offers data processing capacity for use; and

fourth executable code for transparently re-provisioning the customer, within the constraints imposed by the SLA, by re-allocating at least some required data processing resources between at least one of the service provider, the customer, the another service provider, or the data processing site that offers data processing capacity for use.”

As discussed above, Cox et al. do not disclose a Service Level Agreement for allocating at least some data processing resources as in claim 35, and thus claim 35 is not obvious in view of Cox et al.

Claim 36 recites in part:

“..a virtual service provider coupled to the customer through the communication

network, said virtual service provider comprising a system management server for establishing a set of attributes of a customer service provision, and for allocating data processing capability for provisioning the customer from the data processing capability registered by said plurality of data processing sites.”

Cox et al. does not disclose a virtual service provider as in claim 36. Cox et al. does disclose a virtual network:

“It might be useful to note in the following description that "virtual network" is a term used to describe a network effectively dedicated to use of a single customer...” (see column 6, lines 54-56)

However, it is not admitted that this disclosure of a “virtual network” implies a “virtual service provider”. Therefore, claim 36 is not obvious in view of Cox et al.

Claim 39 recites in part:

“..wherein said individual ones of said data processing sites comprising said program code for registering available data processing capability register said available data processing capability with an e-marketplace that is accessible by said virtual service provider using said communication network.”

Cox et al. also does not teach or suggest the use of an e-marketplace. E-marketplaces suggest that resources can be purchased and sold in a distributed manner. Cox et al. instead teaches:

“The knowledge of the presence and capabilities of the physical network elements is isolated from the services” (see column 13, lines 60-61)

“A call arrives at an SDI common physical node because an access number is

interpreted by the carrier as identifying the call as an IN call to be carried by the network operator having the SDI 200.” (see column 14, lines 50-53)

Cox et al. describes a centralized system wherein any IN call is to be carried by the network operator having the Service Delivery Infrastructure (SDI).

It would thus not have been obvious to one skilled in the art to add additional resource allocation beyond the SCP, a set of attributes for provisioning at least one client computer, a virtual service provider or an e-marketplace to Cox et al and thus claims 5-20, 24-26, 28-33, 35 and 36 are not rendered unpatentable by Cox et al.

Claims 27-34 and 36-40 are rejected under 35 U.S.C. 103(a) as being obvious over Cox, et al. in view of Daly (U.S. Patent 5,748,896).

Daly discloses a method for a management server to obtain information about service instantiations for the purposes of displaying the status of those instantiations on a management console. Daly does not address the process of instantiation of the services, nor does it address the flexible instantiation of services as the present invention does. Daly also does not disclose a method that uses service attributes specified by a subscriber to drive the instantiation of service in a manner responsive to the subscriber's desires, nor does Daly address the transparent re-instantiation of services.

Claim 27 recites in part:

“a customer interface for selecting from said set of attributes for defining a Service Level Agreement (SLA) with the service provider, said system management server being responsive to said SLA for provisioning the customer in accordance with constraints imposed by the SLA.”

Daly does not disclose this. Instead, Daly teaches:

“The retrieval of network service instantiation data and, as will be shown later, the administration of those network services, are handled by other discrete components that advantageously encapsulate the low-level details away from the server manager component.” (see column 9, lines 14-19)

Thus, Daly encapsulates the low-level details of network service instantiation data away from the server manager component in contradistinction from the present invention. Further Daly applies to a client/server computer network whereas Cox et al. applies to a telephone communication network, thus, it would not have been obvious to one skilled in the art to combine the teachings of Daly and Cox et al.

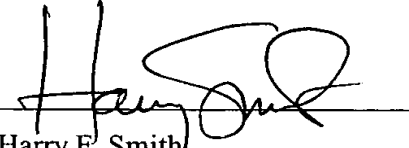
In that independent claims 27 and 36 are not rendered unpatentable by the proposed combination of Cox et al. and Daly, dependent claims 28-34 and 37-40 are also clearly not rendered unpatentable by the proposed combination of Cox et al. and Daly.

Based on the foregoing arguments, it should be clear that none of the prior art cited and relied on by the Examiner, either singularly or in combination, either anticipates or renders obvious the claimed subject matter. The claims as filed, and as now even further clarified by amendment, are thus clearly distinguished from the prior art cited by the Examiner, and the Examiner is respectfully requested to reconsider and remove the rejections, resulting in the allowance of claims 1-40.

S.N. 09/626,430
Art Unit: 2143



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1/15/2004
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